STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0000086
Owner:	The Doe Run Resources Corporation d/b/a The Doe Run Company
Address:	1801 Park 270 Drive, St. Louis, MO 63146
Continuing Authority:	The Doe Run Company
Address:	P.O. Box 500, Viburnum, MO 65566
Facility Name:	Doe Run Company, Viburnum Operations
Facility Address:	PO Box 500, Viburnum, Missouri 65566
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

December 4, 2009 — Effective Date
October 25, 2011 — Revised

Sara Parker Pauley, Director, Department of Natural Resources

December 3, 2014 — Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION:

Outfall #002 – Outfall #002 – Old tailings impoundment discharge – City of Viburnum POTW effluent/truck wash water/storm water runoff from the facility and surrounding watershed/transfers from the new tailings impoundment. Water collected in the basin is combined and undergoes treatment via settling – SIC #1031
Average flow is 2.3 MGD, Maximum flow is 17.4 MGD. Because of storm water influence, actual flow is dependent on precipitation
Legal Description: NW ¼, SW ¼, Sec. 19, T35N, R1W, Iron County
UTM Coordinates: X=668185, Y=4177511
Receiving Stream: Indian Creek (U)
First Classified Stream and ID: Indian Creek (P) (1946)
USGS Basin & Sub-watershed No.: (07140102 – 0302)

Outfall #003 – Eliminated

Outfall #004 – Settling basin discharge - mine dewatering/storm water runoff from mining of lead, zinc and copper bearing ores. Water collected in the basin is combined and undergoes treatment via settling – SIC #1031
Average flow is 1.1 MGD, Maximum measured and reported flow is 1.8 MGD. Because of storm water influence, actual flow is dependent on precipitation
Design flow 0.61 MGD. Actual flow 0.48 MGD
Legal Description: NE ¼, SE ¼, Sec. 7, T35N, R1W, Washington County
UTM Coordinates: X=669361, Y=4180820
Receiving Stream: Tributary to Indian Creek (C) (3663)
First Classified Stream and ID: Tributary to Indian Creek (C) (3663) 303(d)
USGS Basin & Sub-watershed No.: (07140102 – 0302)

Outfall #005 – Outfall #005 – New tailings impoundment emergency spillway discharge - process wastewater from milling of lead, zinc and copper bearing ores/tailings dam toe drain discharge/storm water runoff from facility and surrounding watershed. Water collected in the impoundment is combined and undergoes treatment via settling – SIC #1031
Legal Description: SE ¼, SW ¼, Sec. 36, T35N, R2W, Iron County
UTM Coordinates: X=667242, Y=4173922
Receiving Stream: Indian Creek (U)
First Classified Stream and ID: Indian Creek (P) (1946)
USGS Basin & Sub-watershed No.: (07140102 – 0302)

Outfall #006 – New tailings impoundment toe drain basin/stormwater overflow – tailings dam toe drain/stormwater discharge. Tailings dam toe drain/stormwater overflow that cannot be pumped to the tailings impoundment – SIC #1031
Legal Description: NW ¼, NE ¼, Sec. 36, T35N, R2W, Iron County
UTM Coordinates: X=667400, Y=4175278
Receiving Stream: Unnamed tributary to Indian Creek (U)
First Classified Stream and ID: Indian Creek (P) (1946)
USGS Basin & Sub-watershed No.: (07140102 – 0302)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance (December 4, 2009) and remain in effect until December 3, 2012. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #002, 005 & 006						
Flow	MGD	*		*	once/month	24 hr. estimate
Precipitation	inches	*		*	once/day	24 hr. total
pH – Units	SU	**		**	once/month	grab
Total Suspended Solids	mg/L	30		20	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cadmium, Total Recoverable	µg/L	100		50	once/month	grab
Copper, Total Recoverable	µg/L	300		150	once/month	grab
Lead, Total Recoverable	µg/L	600		300	once/month	grab
Zinc, Total Recoverable	µg/L	1,000		500	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE December 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Outfall 002 Chronic Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2010.						
Outfalls #002, 005 & 006 Mercury, Total Recoverable	µg/L	2		1	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2011.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #004						
Flow	MGD	*		*	once/month	24 hr. estimate
Precipitation	inches	*		*	once/day	24 hr. total
pH – Units	SU	**		**	once/month	grab
Total Suspended Solids	mg/L	30		20	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cadmium, Total Recoverable	µg/L	100		50	once/month	grab
Copper, Total Recoverable	µg/L	300		150	once/month	grab
Lead, Total Recoverable	µg/L	600		300	once/month	grab
Zinc, Total Recoverable	µg/L	1,500		750	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE December 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Outfall 004 Chronic Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2010.						
Outfall #004 Mercury, Total Recoverable	µg/L	2		1	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2011.						

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall 002						
Flow	MGD	*		*	once/month	24 hr. estimate
Precipitation	inches	*		*	once/day	24 hr. total
pH – Units	SU	**		**	once/month	grab
Total Suspended Solids	mg/L	30		20	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cadmium, Total Recoverable	µg/L	0.9		0.5	once/month	grab
Copper, Total Recoverable	µg/L	40.1		20.0	once/month	grab
Lead, Total Recoverable	µg/L	12.4		6.2	once/month	grab
Zinc, Total Recoverable	µg/L	227.7		113.5	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Chronic Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2013.						
Mercury, Total Recoverable	µg/L	2		1	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2011.						

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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall 004						
Flow	MGD	*		*	once/month	24 hr. estimate
Precipitation	inches	*		*	once/day	24 hr. total
pH – Units	SU	**		**	once/month	grab
Total Suspended Solids	mg/L	30		20	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cadmium, Total Recoverable	µg/L	0.9		0.5	once/month	grab
Copper, Total Recoverable	µg/L	99.5		49.6	once/month	grab
Lead, Total Recoverable	µg/L	23.0		11.5	once/month	grab
Zinc, Total Recoverable	µg/L	322.5		160.7	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Chronic Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2013.						
Mercury, Total Recoverable	µg/L	2		1	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2013.						

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls 005 & 006						
Flow	MGD	*		*	once/month	24 hr. estimate
Precipitation	inches	*		*	once/day	24 hr. total
pH – Units	SU	**		**	once/month	grab
Total Suspended Solids	mg/L	30		20	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cadmium, Total Recoverable	µg/L	0.9		0.5	once/month	grab
Copper, Total Recoverable	µg/L	23.0		11.4	once/month	grab
Lead, Total Recoverable	µg/L	10.3		5.1	once/month	grab
Zinc, Total Recoverable	µg/L	188		93.5	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Mercury, Total Recoverable	µg/L	2		1	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2013.						

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* - Monitoring requirement only.
** - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
*** - Sample once per day when discharging. Report as "No Discharge" if discharge does not occur during the reporting period.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
   (c) That the effluent limit established in Part A of the permit will be exceeded.

4. Report as "No Discharge" when a discharge does not occur during the report period.

5. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS (continued)

6. Industrial Sludge Disposal
   (a) Disposal of industrial sludge is not authorized by this permit. Industrial sludge shall be disposed at a permitted solid waste disposal facility in accordance with 10 CSR 80; or if the sludge is determined to be hazardous waste, shall be disposed at a permitted hazardous waste disposal facility pursuant to 10 CSR 25.
   (b) Non-hazardous sludge that is disposed on site or that is exempted under 10 CSR 80 must obtain applicable permits under 10 CSR 20-6.015 and 10 CSR 20-6.200.
   (c) Each effluent monitoring report shall also specify the date any sludge is removed from the facility, who removed the sludge and the number of gallons or quantity of sludge removed. The final disposal location shall be reported, including the name of the disposal facility, the solid waste or hazardous waste disposal permit number, and date of permit issuance.
   (d) This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act.

7. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared within 90 days and implemented within 120 days of permit issuance. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

   Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

   The SWPPP must include the following:
   (a) An assessment of all storm water discharges associated with the facility, including those flowing to the tailings pond. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
   (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water.
   (c) The SWPPP must include a schedule for a monthly site inspection and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. Deficiencies must be corrected within seven days. Inspection reports must be kept on site with the SWPPP. These must be made available to DNR personnel upon request.
   (d) A provision for designating an individual to be responsible for environmental matters.
   (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.

8. The permittee shall adhere to the following minimum Best Management Practices:
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or other activities and thereby prevent the contamination of storm water from these substances.
   (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
   (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
   (d) Provide good housekeeping practices on the site to keep solid waste from entry into waters of the state.
   (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.

C. SPECIAL CONDITIONS (continued)

9. Whole Effluent Toxicity tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	Toxic Unit Limit	FREQUENCY	SAMPLE TYPE	MONTH
002	100%	1.6 TUc	Once per quarter	Grab	January, April, July, October
004	100%	1.6 TUc	Once per quarter	Grab	January, April, July, October

Dilution Series						
100%	62.5%	25%	12.5%	6.25%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

(1) All tests results shall be submitted using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 14 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.

(a) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.

(b) Samples submitted for analysis of upstream receiving water may be collected as a grab.

(c) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

(d) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.

(e) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.

(f) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.

(g) Where instream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.

(h) Samples submitted for analysis of downstream receiving water may be collected as a grab.

(i) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) The WET test will be considered a failure if the Toxic Units exceed the limit in the table above.

(3) All failing test results along with complete copies of the test reports as received from the laboratory shall be reported to the WATER PROTECTION PROGRAM within 14 calendar days of the availability of the results.

(4) Unless waived by the Department, if the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter until one of the following conditions are met:

(a) Three consecutive tests pass. No further tests need to be performed until next regularly scheduled test period.

(b) A total of three tests fail.

(5) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM within 14 calendar days of the third failed test.

C. SPECIAL CONDITIONS (continued)

9. Whole Effluent Toxicity tests (continued):

(6) Additionally, upon failure of the third follow up test, the permittee shall contact the Water Protection Program within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the Water Protection Program directs the permittee to conduct a TIE or TRE, the permittee shall submit a plan for conducting a TIE or TRE within 60 calendar days of receiving such direction. This plan for conducting the TIE or TRE must be approved by the Program before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.

(10) Submit a concise summary in tabular format of all WET test results with the annual report.

(c) Test Conditions

(1) Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821/R-02/013, and Errata for the Effluent and Receiving Water Toxicity Testing Manuals: Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms; Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms; and Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms EPA-600/R-98/182.

(2) The test shall be a 3-Brood *Ceriodphnia dubia* Survival and Reproduction Test and a 7-Day Fathead Minnow (*Pimephales promelas)* Larval Survival and Growth Test. Testing with the green algae Selenastrum is not required.

(3) All tests, including repeat tests for previous failures, shall include both test species listed below unless prior approval to use only one species is granted by the department.

(4) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines.

(5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Reconstituted dilution/control water used will be moderately hard water as described in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms.

(6) Multiple-dilution tests will be run with:

(a) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(b) reconstituted water.

(7) If, in any control more than 10% of the test organisms die in 7 days, the test (control and effluent) is considered invalid and the test shall be repeated within two (2) weeks. Furthermore, if the results do not meet the acceptability criteria in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013 (or the most current edition), or if the required concentration-response review fails to yield a valid relationship per guidance contained in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, EPA-821-B-00-004 (or the most current edition), that test shall be repeated. Any test initiated but terminated before completion must also be reported along with a complete explanation for the termination.

D. SCHEDULE OF COMPLIANCE

1. The permittee must attain compliance with the final effluent limits as soon as possible, but no later than three years after issuance of this permit.

2. Within one year of issuance of this permit, the permittee shall submit a report detailing progress made in attaining compliance with the final effluent limits.

3. Within two years of issuance of this permit, the permittee shall submit a report detailing progress made in attaining compliance with the final effluent limits.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF MODIFICATION
OF
MO-0000086
FACILITY NAME

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major ☒, Minor ☐, Industrial Facility ☒; Variance ☐;
Master General Permit ☐; General Permit Covered Facility ☐; and/or permit with widespread public interest ☐.

Part I – Facility Information

Facility Type: IND Industrial process wastewater, Metallic Mineral Mining
Facility SIC Code(s): 1031

Facility Description:
Mining and milling of lead, zinc and copper bearing ores. Process wastewaters include mine dewatering and tailings impoundment dam toe drain discharge. The facility also manages truck wash water, and storm water runoff from the facility and surrounding watershed. Tailings dam toe drain discharge, truck wash water, and storm water runoff from the facility and surrounding watershed receive treatment by settling in the tailings impoundments. Mine water receives treatment by settling in settling basins. A portion of the water from the new tailings impoundment is transferred to the truck wash basin and subsequently to the old tailings impoundment to maintain freeboard and receive treatment by settling.

Comments:
Changes to this permit include:

- Revision of the final effluent limits for Copper, Lead and Zinc for outfalls 002 & 004. This modification is the result of site specific dissolved metal translator study conducted by the permittee, under a study plan approved by the Department of Natural Resources.
- Correction of the Effluent Limit Guideline citations
- The sample type for WET testing is changed from a 24 hr. composite sample to a grab sample.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
002	26.97	settling	Stormwater	1.2
004	2.79	settling	Mine dewatering	0.0
005	0.0	settling	Process wastewater	3.5
006	0.0	settling	Process wastewater	2.7

Part II – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Indian Creek	U	----	General Criteria		
Tributary to Indian Creek	C	3663	LLW, AQL, CLF, WBC(B)		
Indian Creek	P	1946	LLW, AQL, CLF, WBC(B)		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).
** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW –FLOW TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Indian Creek (U)	0.0	0.0	0.0
Tributary to Indian Creek (C)	0.0	0.0	0.1

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

Part III – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Applicable ☐;

Not Applicable ☒;
The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☐ - New facility, backsliding does not apply.

☒ - All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply. The effluent limit increases are as protective of instream water quality standards as the previously established limits. Adjustments to the effluent limits were made in accordance with U.S. EPA guidance on site specific dissolved metals translators. In addition, the facility is not presently in compliance with the previous effluent limits, therefore the revised effluent limits do not represent a possible decrease in performance.

☐ - Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☐ - Renewal no degradation proposed and no further review necessary.

☐ - New and/or expanded discharge, please see **APPENDIX # – ANTIDEGRADATION ANALYSIS.**

☒ - No degradation proposed and no further review necessary. Increased effluent limits do not represent additional loading, because the facility is not in compliance with the previous limits. The proposed final effluent limits still result in decreased loading to the stream.

COMPLIANCE AND ENFORCEMENT:
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Applicable ☒;
The permittee/facility is currently under enforcement action by the U.S. EPA and the State of Missouri due to violations of the Missouri Clean Water Law and the Federal Clean Water Act.

Not Applicable ☐;
The permittee/facility is not currently under Water Protection Program enforcement action.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ☒;
The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)].

Not Applicable ☐;
This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators,* (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ☒;
A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

Not Applicable ☐;
At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Applicable ☐;

Not Applicable ☒;
This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ☒;
Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":
Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

Not Applicable ☐;
Wasteload allocations were not calculated.

WLA MODELING:
There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Applicable ☐;

Not Applicable ☒;
A WLA study was either not submitted or determined not applicable by Department staff. The dissolved metals translator study is not a wasteload allocation study, it adjusts effluent limit calculations based on the previous WLAs.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ☒;
Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by all facilities meeting the following criteria:
☒ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility (industrial) that alters its production process throughout the year.
☒ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☒ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☐ Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
☒ Other – facility has demonstrated that its effluent is significantly toxic. Facility will pursue upgrades to wastewater treatment.

Due to the lack of variation expected in discharge quality from outfalls 002 and 004, grab samples for WET are appropriate. The primary source of flow for outfall 004 is mine dewatering. Miles of tunnels and millions of square feet of surface area are exposed to groundwater discharges into the mine. Underground operations affecting the vast majority of the mine water do not change over the course of a day. The ongoing mining at the face of the mine accounts for a negligible area. Therefore, mine water can be expected to be consistent over the course of a day.

Mine water is conveyed to sump locations and then pumped to the surface. At the surface the mine water is treated by settling in basins before discharge. The hydraulic residence time in the settling basins varies at each facility but is typically greater than 24 hours. Any variability in pollutant concentrations in the mine water would be dampened as a result of significant attenuation and mixing while in the settling basins. Therefore, discharges through monitored outfalls can be expected to exhibit minimal variation over the course of a day.

Not Applicable ☐;
At this time, the permittee is not required to conduct WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable ☒; Indian Creek and Tributary to Indian Creek are on the 2008 303(d) list for Lead and Zinc. The sole source of this pollution is the Viburnum Mine. No TMDL has been completed, therefore standard water quality based effluent limits apply. When the TMDL is completed for these streams this permit will be reopened and modified to include the new wasteload allocations.

Not Applicable ☐;
This facility does not discharge to a 303(d) listed stream.

Part V – Effluent Limits Determination

Outfall #002

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
COPPER, TOTAL RECOVERABLE	µg/L	2,3	40.1		20.0	YES	23.0/11.4
LEAD, TOTAL RECOVERABLE	µg/L	2,3	12.4		6.2	YES	10.3/5.1
ZINC, TOTAL RECOVERABLE	µg/L	2,3	227.7		113.5	YES	188.0/93.5

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET Test Policy
12. Antidegradation Review

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

Metals
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document For Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 206 mg/L is used to calculate water quality criteria. This hardness is based on the effluent flow from outfall 002, as this discharge is to an unclassified stream which flows more than a mile before reaching a classified stream. Therefore the hardness of the unclassified stream is expected to closely resemble the effluent hardness from this facility.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.890	0.890
Copper	0.660	0.660
Lead	0.720	0.720
Zinc	0.950	0.950

Conversion factor values supplied by the permittee via a dissolved metals translator study. This study provides the site specific conditions for determining partitioning between dissolved and total recoverable metals. The plan for this study was approved by the Department.

- **Cadmium, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 0.41 µg/L, Acute Criteria = 9.60 µg/L

  Chronic = 0.41 / 0.890 = 0.5 µg/L
  Acute = 9.60 / 0.890 = 10.8 µg/L

  WLA_C = 0.50 µg/L
  WLA_A = 10.80 µg/L

  LTA_C = 0.50 (0.527) = 0.3 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 10.80 (0.321) = 3.5 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 0.30 (3.11) = 0.9 µg/L [CV = 0.6, 99th Percentile]
  AML = 0.30 (1.55) = 0.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Copper, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 16.6 µg/L, Acute Criteria = 26.5 µg/L

  Chronic = 16.6 / 0.660 = 25.2 µg/L
  Acute = 26.5 / 0.660 = 40.2 µg/L

  WLA_C = 25.2 µg/L
  WLA_A = 40.2 µg/L

  LTA_C = 25.2 (0.527) = 13.3 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 40.2 (0.321) = 12.9 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 12.9 (3.11) = 40.1 µg/L [CV = 0.6, 99th Percentile]
  AML = 12.9 (1.55) = 20.0 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 5.5 µg/L, Acute Criteria = 140 µg/L

  Chronic = 5.5 / 0.720 = 7.6 µg/L
  Acute = 140 / 0.720 = 194 µg/L

  WLA_C = 7.6 µg/L
  WLA_A = 194 µg/L

  LTA_C = 7.6 (0.527) = 4.0 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 194 (0.321) = 62.3 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 4.0 (3.11) = 12.4 µg/L [CV = 0.6, 99th Percentile]
  AML = 4.0 (1.55) = 6.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Zinc, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 217 µg/L, Acute Criteria = 217 µg/L

Chronic = 217 / 0.950 = 228 µg/L
Acute = 217 / 0.950 = 228 µg/L

WLA_C = 228 µg/L
WLA_A = 228 µg/L

LTA_C = 228 (0.527) = 120.2 µg/L [CV = 0.6, 99th Percentile]
LTA_A = 228 (0.321) = 73.2 µg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_C or LTA_A.

MDL = 73.2 (3.11) = 228 µg/L [CV = 0.6, 99th Percentile]
AML = 73.2 (1.55) = 113.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

Categorical Effluent Limits, Best Conventional Pollutant Control Technology (BCT)
Categorical effluent limits represent minimum technology based standards.

Part 440 - Ore Mining and Dressing Point Source Category
Subpart J - Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory
40 CFR 440.102(b), 10 CSR 20-7.015(9)(G)1.

Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS.....	30.0	20.0
Cu.....	0.30	0.15
Zn.....	1.0	0.5
Pb.....	0.6	0.3
Hg.....	0.002	0.001
Cd.....	0.10	0.05
pH.....	(\1\)	(\1\)

\1\ Within the range 6.0 to 9.0.

COMPARISON OF WATER QUALITY BASED EFFLUENT LIMITS VS. CATEGORICAL LIMITS
A comparison must be made of all calculated water quality based effluent limits and categorical limits. The most protective limit appears in the permit.

Effluent Parameter	Water Quality Based Effluent Limit	Categorical Limit
Total Suspended Solids (mg/L)	100 / 50	**30 / 20**
Copper, Total Recoverable (µg/L)	**40.1/20.0**	300 / 150
Zinc, Total Recoverable (µg/L)	**227.7/113.5**	1,000 / 500
Lead, Total Recoverable (µg/L)	**12.4/6.2**	600 / 300
Mercury, Total Recoverable (µg/L)	0.9/0.5	**2 / 1**
Cadmium, Total Recoverable (µg/L)	**0.9/0.5**	100 / 50
pH (SU)	**6.5 - 9.0**	6.0 - 9.0

Outfall #004 – Mine Dewatering

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
COPPER, TOTAL RECOVERABLE	µg/L	2,3	99.5		49.6	YES	23.0/11.4
LEAD, TOTAL RECOVERABLE	µg/L	2,3	23.0		11.5	YES	10.3/5.1
ZINC, TOTAL RECOVERABLE	µg/L	2,3	322.5		160.7	YES	188.0/93.5

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET Test Policy
12. Antidegradation Review

OUTFALL #004 – DERIVATION AND DISCUSSION OF LIMITS:

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document For Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 284 mg/L, the instream hardness for Indian Creek below this facility, is used in calculating water quality criteria.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.850	0.850
Copper	0.360	0.360
Lead	0.550	0.550
Zinc	0.880	0.880

Conversion factor values supplied by the permittee via a dissolved metals translator study. This study provides the site specific conditions for determining partitioning between dissolved and total recoverable metals. The plan for this study was approved by the Department.

- **Cadmium, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 0.51 µg/L, Acute Criteria = 13.11 µg/L

  Chronic = 0.51 / 0.850 = 0.6 µg/L
  Acute = 13.11 / 0.850 = 15.4 µg/L

  WLA_C = 0.60 µg/L
  WLA_A = 15.40 µg/L

  LTA_C = 0.60 (0.527) = 0.3 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 15.40 (0.321) = 4.9 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 0.30 (3.11) = 0.9 µg/L [CV = 0.6, 99th Percentile]
  AML = 0.30 (1.55) = 0.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Copper, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 21.9 µg/L, Acute Criteria = 35.9 µg/L

  Chronic = 21.9 / 0.360 = 60.8 µg/L
  Acute = 35.9 / 0.360 = 99.7 µg/L

  WLA_C = 60.8 µg/L
  WLA_A = 99.7 µg/L

  LTA_C = 60.8 (0.527) = 32.0 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 99.7 (0.321) = 32.0 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 32.0 (3.11) = 99.5 µg/L [CV = 0.6, 99th Percentile]
  AML = 32.0 (1.55) = 49.6 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 7.7 µg/L, Acute Criteria = 197 µg/L

  Chronic = 7.7 / 0.550 = 14.0 µg/L
  Acute = 197 / 0.550 = 358 µg/L

  WLA_C = 14.0 µg/L
  WLA_A = 358 µg/L

  LTA_C = 14.0 (0.527) = 7.4 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 358 (0.321) = 114.9 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 7.4 (3.11) = 23.0 µg/L [CV = 0.6, 99th Percentile]
  AML = 7.4 (1.55) = 11.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Zinc, Total Recoverable** Protection of Aquatic Life Chronic Criteria = 284 µg/L, Acute Criteria = 284 µg/L

  Chronic = 284 / 0.880 = 323 µg/L
  Acute = 284 / 0.880 = 323 µg/L

  WLA_C = 323 µg/L
  WLA_A = 323 µg/L

  LTA_C = 323 (0.527) = 170.2 µg/L [CV = 0.6, 99th Percentile]
  LTA_A = 323 (0.321) = 103.7 µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_C or LTA_A.

  MDL = 103.7 (3.11) = 323 µg/L [CV = 0.6, 99th Percentile]
  AML = 103.7 (1.55) = 160.7 µg/L [CV = 0.6, 95th Percentile, n = 4]

Categorical Effluent Limits, Best Conventional Pollutant Control Technology (BCT)
Categorical effluent limits represent minimum technology based standards.

Part 440 - Ore Mining and Dressing Point Source Category
Subpart J - Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory
40 CFR 440.102(a), 10 CSR 20-7.015(9)(G)1.

Effluent characteristic	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Milligrams per liter	
TSS.....	30.0	20.0
Cu.....	0.30	0.15
Zn.....	1.5	0.75
Pb.....	0.6	0.3
Hg.....	0.002	0.001
pH.....	(\1\)	(\1\)

\1\ Within the range 6.0 to 9.0.

COMPARISON OF WATER QUALITY BASED EFFLUENT LIMITS VS. CATEGORICAL LIMITS
A comparison must be made of all calculated water quality based effluent limits and categorical limits. The most protective limit appears in the permit.

Effluent Parameter	Water Quality Based Effluent Limit	Categorical Limit
Total Suspended Solids (mg/L)	100 / 50	**30 / 20**
Copper, Total Recoverable (µg/L)	**99.5/49.6**	300 / 150
Zinc, Total Recoverable (µg/L)	**322.5/160.7**	1,500 / 750
Lead, Total Recoverable (µg/L)	**23.0/11.5**	600 / 300
Mercury, Total Recoverable (µg/L)	N/A	**2 / 1**
Cadmium, Total Recoverable (µg/L)	**0.9/0.5**	N/A
pH (SU)	**6.5 - 9.0**	6.0 - 9.0

Part V – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

The Public Notice period for this operating permit modification was from September 8, 2011 to October 14, 2011. During public notice a comment was received from the permittee, which included an amended Facility Description and correction of a typographical error in the WET test section of the permit. The permittee also submitted information that demonstrated no reasonable potential existed for exceedance of Water Quality Standards for Mercury at outfalls 004, 005 & 006. This is consistent with other mining facilities in this region, as there is very little Mercury present in this ore body. Because this facility is subject to an Effluent Limit Guideline (ELG) for Mercury, and cannot certify that no Mercury exists in the wastewater, the Technology Based Effluent Limits from the ELG must be applied even though no Water Quality Based Effluent Limits would apply. The Mercury limits for outfalls 004, 005 & 006 are now consistent with outfall 002.

DATE OF FACT SHEET: 10-17-11

COMPLETED BY:

CURT B. GATELEY, CHIEF
NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
(573) 526-1155
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
Revised
October 1, 1980

PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING

1. **Representative Sampling**
   a. Samples and measurements taken as required herein shal be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
   b. Monitoring results shall be recorded and reported on forms provided by the Department, postmarked no later than the 28th dayof the month following the completed reporting period. Signed copies of these, and all other reports required herein, shal be submitted to the respective Department Regional Office, the Regional Office address is indicated in the cover letter transmitting the permit.

2. **Schedule of Compliance**
   No later than fourteen (14) calendar days following each date identified in the "Schedule of Compliance", the permittee shall submit to the respective Department Regional Office as required therein, either a repot of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements, or if there are no more scheduled requirements, when such noncompliance will be corrected. The Regional Office address is indicated in the cover letter transmitting he permit.

3. **Definitions**
   Definitions as set forth in the Missouri Clean Water Law and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein.

4. **Test Procedures**
   Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.

5. **Recording of Results**
   a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
      (i) the date, exact place, and time of sampling or measurements;
      (ii) the individual(s) who performed the sampling or measurements;
      (iii) the date(s) analyses were performed;
      (iv) the individual(s) who performed the analyses;
      (v) the analytical techniques or methods used; and
      (vi) the results of such analyses.
   b. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate anymonitoring device or method required to be maintained under this permit shall, upon conviction, be punished bya fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or both.
   c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

6. **Additional Monitoring by Permittee**
   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required bythis permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monitoring Report Form. Such increased frequencyshall also be indicated.

7. **Records Retention**
   The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

SECTION B - MANAGEMENT REQUIREMENTS

1. **Change in Discharge**
   a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
   b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before each such changes, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.

2. **Noncompliance Notification**
   a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
      (i) a description of the discharge and cause of noncompliance, and
      (ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps beingtaken to reduce, eliminate and prevent `recurrence of the noncomplying discharge.
   b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

3. **Facilities Operation**
   Permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions. Operators or supervisors of operations at publicly owned or publicly regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 209.020(2) and any other applicable law or regulation. Operators of other wastewater treatment facilities, water contaminant source or point sources, shall, upon request by the Department, demonstrate that wastewater treatment equipment and facilities are effectively operated and maintained by competent personnel.

4. **Adverse Impact**
   The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

a. Any bypass or shut down of a wastewater treatment facility and tributary sewer system or any part of such a facility and sewer system that results in a violation of permit limits or conditions is prohibited except:
   (i) where unavoidable to prevent loss of life, personal injury, or severe property damages; and
   (ii) where unavoidable excessive storm drainage or runoff would catastrophically damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit;
   (iii) where maintenance is necessaryto ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance.

b. The permittee shall notify the Department in writing of all bypasses or shut down that result in a violation of permit limits or conditions. This section does not excuse any person from liability, unless such relief is otherwise provided by the statute.

6. **Removed Substances**
Solids, sludges, filter backwash, or any other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from entering waters of the state unless permitted by the Law, and a permanent record of the date and time, volume and methods of removal and disposal of such substances shal be maintained by the permittee.

7. **Power Failures**
In order to maintain compliance with the effluent limitations and other provisions of this permit, the permittee shall either:
a. in accordance with the "Schedule of Compliance", provide an alternative power source sufficient to operate the wastewater control facilities; or,
b. if such alternative power source is not in existence, and no date for its implementation appears in the Compliance Schedule, halt or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

8. **Right of Entry**
For the purpose of inspecting, monitoring, or sampling the point source, water contaminant source, or wastewater treatment facility for compliance with the Clean Water Law and these regulations, authorized representatives of the Department, shall be allowed by the permittee, upon presentation of credentials and at reasonable times;
a. to enter upon permittee's premises in which a point source, water contaminant source, or wastewater treatment facility is located or in which any records are required to be kept under terms and conditions of the permit;
b. to have access to, or copy, any records required to be kept under terms and conditions of the permit;
c. to inspect any monitoring equipment or method required in the permit;
d. to inspect any collection, treatment, or discharge facility covered under the permit; and
e. to sample any wastewater at any point in the collection system or treatment process.

9. **Permits Transferable**
a. Subject to Section (3) of 10 CSR 20-6.010 an operating permit may be transferred upon submission to the Department of an application to transfer signed by a new owner. Until such time as the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
b. The Department, within thirty (30) days of receipt of the application shall notify the new permittee of its intent to revoke and reissue or transfer the permit.

10. **Availability of Reports**
Except for data determined to be confidential under Section 308 of the Act, and the Law and Missouri Clean Water Commission Regulation for Public Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-6.020, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by statute, effluent data shall not be considered confidential. Knowingly making any false statement on any such report shall be subject to the imposition of criminal penalties as provided in Section 204.076 of the Law.

a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
   (i) violation of any terms or conditions of this permit or the Law;
   (ii) having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
   (iii) a change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge, or
   (iv) any reason set forth in the Law and Regulations.
b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

12. **Permit Modification - Less Stringent Requirements**
If any permit provisions are based on legal requirements which are lessened or removed, and should no other basis exist for such permit provisions, the permit shall be modified after notice and opportunity for a hearing.

13. **Civil and Criminal Liability**
Except as authorized by statute and provided in permit conditions on "Bypassing" (Standard Condition B-5) and "Power Failures" (Standard Condition B-7) nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

14. **Oil and Hazardous Substance Liability**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, and the Law and Regulations. Oil and hazardous materials discharges must be reported in compliance with the requirements of the Federal Clean Water Act.

15. **State Laws**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state statute or regulations.

16. **Property Rights**
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, no does it authorize any injury to private property or any invasion of personal rights, nor any infringement of or violation of federal, state or local laws or regulations.

17. **Duty to Reapply**
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to expiration of this permit.

18. **Toxic Pollutants**
If a toxic effluent standard, prohibition, or schedule of compliance is established, under Section 307(a) of the Federal Clean Water Act for a toxic pollutant in the discharge of permittee's facility and such standard is more stringent than the limitations in the permit, then the more stringent standard, prohibition, or schedule shall be incorporated into the permit as one of its conditions, upon notice to the permittee.

19. **Signatory Requirement**
All reports, or information submitted to the Director shall be signed (see 40 CFR-122.6).

20. **Rights Not Affected**
Nothing in this permit shall affect the permittee's right to appeal or seek a variance from applicable laws or regulations as allowed by law.

21. **Severability**
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
AUGUST 15, 1994

PART III – SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation and incorporates applicable federal sludge disposal requirements under 40 CFR 503. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFS 503 until such time as Missouri is delegated the new EPA sludge program. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Sludge and Biosolids Use and Disposal Practices.
    a. Permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. Permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. Permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
    d. A separate operating permit is required for each operating location where sludge or biosolids are generated, stored, treated, or disposed, unless specifically exempted in this permit or in 10 CSR 20, Chapter 6 regulations. For land application, see section H, subsection 3 of these standard conditions.
4. Sludge Received From Other Facilities
    a. Permitees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge.
    c. Sludge received from out-of-state generators shall receive prior approval of the permitting authority and shall be listed in the facility description or special conditions section of the permit.
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after du process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RsMo.
8. In addition to the STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of this permit.
9. Alternate Limits in Site Specific Permit.
   Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:
    a. An individual permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fees, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the department, as follows:
    a. The department will prepare a permit modification and follow permit public notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owners of property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be grated where prohibited by the federal sludge regulations under 40 CFR 503.
11. Compliance Period
    Compliance shall be achieved as expeditiously as possible but no later than the compliance dates under 40 CFR 503.2.

SECTION B – DEFINITIONS

1. Biosolids means an organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge. Untreated sludge or sludge that does not conform to the pollutants and pathogen treatment requirements in this permit is not considered biosolids.
2. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
3. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
4. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a public owned treatment works (POTW) or privately owned facility.
6. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include unaerated wastewater treatment lagoons and constructed wetlands for wastewater treatment.
7. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
8. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the next growing season after biosolids application.
9. Sinkhole is a depression in the land surface into which surface water flows to join an underground drainage system.
10. Site Specific Permit is a permit that has alternate limits developed to address specific site conditions for each land application site or storage site.
11. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks.
12. Sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
13. Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas. Wetlands do not include constructed wetlands used for wastewater treatment.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from the wastewater treatment facilities and handled according to the permit facility description and sludge conditions in this permit.
2. The permittee shall operate the facility so that there is no sludge loss into the discharged effluent in excess of permit limits, no sludge bypassing, and no discharge of sludge to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the department; or the hauler transports the sludge to another permitted treatment facility.
3. The permittee shall require documentation from the contractor of the disposal methods used and permits obtained by the contractor.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility.

SECTION E – WASTEWATER TREATMENT LAGOONS AND STORMWATER RETENTION BASINS

1. Sludge that is retained within a wastewater treatment lagoon is subject to sludge disposal requirements when the sludge is removed from the lagoon or when the lagoon ceases to receive and treat wastewater.
2. If sludge is removed during the year, an annual sludge report must be submitted.
3. Storm water retention basins or other earthen basins, which have been used as sludge storage for a mechanical treatment system is considered a sludge lagoon and must comply with Section G of this permit.

SECTION F – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous waste, shall be disposed in accordance with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored; and ash use or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.
4. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions sections of this permit.

SECTION G – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites shall comply with the requirements in 40 CFR 503 Subpart C, and solid waste disposal regulations under 10 CSR 80.
2. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions section of this permit.
3. Effective February 19, 1995, a sludge lagoon that has been in use for more than two years without removal of accumulated sludge, or that has not been properly closed shall comply with one of the following options:
    a. Permittee shall obtain a site specific permit to address surface disposal requirements under 40 CFR 503, ground water quality regulations under 10 CSR 20, Chapter 7 and 8, and solid waste management regulations under 10 CSR 80;
    b. Permittee shall clean out the sludge lagoon to remove any sludge over two years old and shall continue to remove accumulated sludge at least every two years or an alternate schedule approved under 40 CFR 503.20(b). In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the department; or
    c. Permittee shall close the lagoon in accordance with Section 1.

SECTION H – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the Facility Description or special conditions section of the permit.
2. This permit replaces and terminates all previous sludge management plan approvals by the department for land application of sludge or biosolids.
3. Land application sites within a 20 mile radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless a site specific permit is required under Section A, Subsection 9.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
    a. This permit does not authorize the land application of sludge except when sludge meets the definition of biosolids.
    b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater sludges to be land applied onto grass land, crop land, timber land or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites.
    Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the department. Applications for approval shall be in the form of an engineering report and shall address priority pollutants and dioxin concentrations. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site-specific permit.

6. Agricultural and Silvicultural Sites.
   In addition to specified conditions herein, this permit is subject to the attached Water Quality Guides numbers WQ 422 through 426 published by the University of Missouri, and herby incorporated as though fully set forth herein. The guide topics are as follows:
   - WQ 422 Land Application of Septage
   - WQ 423 Monitoring Requirements for Biosolids Land Application
   - WQ 424 Biosolids Standards for Pathogens and Vectors
   - WQ 425 Biosolids Standards for Metals and Other Trace Substances
   - WQ 426 Best Management Practices for Biosolids Land Applications

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater treatment facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees who plan to cease operation must obtain department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids, and ash. Permittee must maintain this permit until the facility is properly closed per 10 CSR 20-6.010 and 10 CSR 20-6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure shall not exceed the agricultural loading rates as follows:
   a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
   b. If a wastewater treatment lagoon has been in operation for 15 years or more, the sludge in the lagoon qualifies for Class B with respect to pathogens (see WQ 424, Table 3), and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B limitations. Se WQ 423 and 424.
   c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. See WQ 426 for calculation procedures. For a grass cover crop, the allowable PAN is 300 pounds/acre.
4. When closing a wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works” definition. See WQ 422. Under the septage category, residuals may be left in place as follows:
   a. Testing for metals or fecal coliform is not required.
   b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at the rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
   c. The amount of sludge that may be left in the lagoon shall be based on the plan available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If more than 100 dry tons/acre will be left in the lagoon, test for nitrogen and determine the PAN in accordance with WQ 426. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berms shall be demolished, and the site shall be graded and vegetated so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoon closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed five acres in accordance with 10 CSR 20-6.200.
7. If sludge exceeds agricultural loading rates under Section H or I, a landfill permit or solid waste disposal permit shall be obtained to authorize on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately respresent sludge quantities produced and disposed.
2. Testing for land application is listed under Section H, Subsection 6 of these standard conditions (see WQ 423). Once per year is the minimum test frequency. Additional testing shall be performed for each 100 dry tons of sludge generated or stored during the year.
3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the department.
4. Monitoring requirements shall be performed in accordance with, “POTW Sludge Sampling and Analysis Guidance Document”, United States Environmental Protection Agency, August 1989, and subsequent revisions.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these Standard Conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting Period
   a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.
4. Report shall be submitted as follows:
   Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:

   DNR regional office listed in your permit
   (See cover letter of permit)

   EPA Region VII
   Water Compliance Branch (WACM)
   Sludge Coordinator
   901 N 5th Street
   Kansas City, KS 66101

5. Annual Report Contents. The annual report shall include the following:
   a. Sludge/biosolids testing performed. Include a copy or summary of all test results, even if not required by this permit.
   b. Sludge or Biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at end of year, and the quantity used or disposed.
   c. Gallons and % solids data used to calculate the dry ton amounts.
   d. Description of any unusual operating conditions.
   e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
      (1) This must include the name, address and permit number for the hauler and the sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name and permit number of that facility.
      (2) Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
   f. Contract Hauler Activities.
      If contract hauler, provide a copy of a signed contract or billing receipts from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge disposal or biosolids use permit.
   g. Land Application Sites.
      (1) Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as legal description for nearest ¼, ¼, Section, Township, Range, and County, or as latitude and longitude.
      (2) If biosolids application exceeds 2 dry tons/acre/year, report biosolids nitrogen results. Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement, available nitrogen in the soil prior to biosolids application, and PAN calculations for each site.
      (3) If the "Low Metals" criteria is exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative loading which has been reached at each site.
      (4) Report the method used for compliance with pathogen and vector attraction requirements.
      (5) Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.